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lines toward the violet and the formation of the second component which was measured on September 4th. The strong enhanced lines at λ 4924 and 5018 behave very much like those of hydrogen in this respect and give values in good agreement with the latter. It is of interest to note that the minimum displacement in the case of this star as in that of *Nova Aquilae* of 1918 agrees fairly well with the maximum of light and increases rapidly when the star begins to decline in light.

The radial velocity of *Nova Cygni* as determined from the H and K lines on 15 spectrograms is −18 km. The component of the solar motion in the direction of the star is 18 km., thus indicating that the star has no appreciable velocity relative to the stars in general.

W. S. Adams,
A. H. Joy.

Two Stars of Spectral Class R with Large Radial Velocities

The number of stars known to belong to spectral Class R is small compared with that for almost any other type and consequently their average radial velocity would be greatly affected by a few abnormally high values. Accordingly it is of interest to call attention to two stars of this class whose radial velocities reduced to the Sun are exceptional. They are:

Name	Mag.	α 1920	δ 1920	velocity	No. of plates
BD+23° 123	8.3	$0^h50^m.0$	+23°38′	−242 km./sec.	2
BD+20 5071	8.7	22 0 .6	+20 40	−416 km./sec.	2

These velocities have been derived from some of the best and most characteristic lines for this class of spectrum, assuming the wavelengths derived by Rufus[1] but they should be considered as approximations only. So far as the writer knows no velocity has been published previously for the first star.

BD+20° 5071 was observed by Rufus, who refers to difficulties in treating the measures he made. From three plates he deduced −49 km. sec. as the radial velocity reduced to the Sun. The writer feels that the larger value (−416 km. sec.) must be close to the true value for the following reasons; (*a*) it seems to give the best coincidence of lines when this star is compared with others on the Hartmann spectro-comparator, (*b*) it gives a better agreement between the lines of this and other Class R stars in character and intensity as given by Rufus, especially in the case of the stronger lines, (*c*) it is confirmed by the velocity (−420 km. sec.) given by the H and K lines of calcium on a spectrogram of this star taken with a focal plane spectrograph of low dispersion.

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[1] *Publ. of the Observatory, Univ. of Mich.*, **2**, 103, 1915.

It should be noted that in the finer details of the spectrum of BD+20° 5071 there are marked differences from other Class R stars and that this fact makes the radial velocity treatment of this star difficult.

These two stars stand out as exceptional in their radial velocities among more than twenty others which have been observed. Unless others are found perhaps they should not be considered in connection with the average radial velocity for the class. Certainly if considered among twenty or so others whose velocities are moderate they will considerably change the average.

R. F. SANFORD.

SUMMARY OF MOUNT WILSON MAGNETIC OBSERVATIONS OF SUN-SPOTS FOR JULY AND AUGUST, 1920

Foggy weather prevented observations with the spectroheliograph on August 24th, 25th, and 26th so that there is some uncertainty in the classification of the α groups on those days. No. 1734 was most likely αp on both days. No. 1735, which was a negative spot in the northern hemisphere may have been αf.

MAGNETIC CLASSIFICATION OF SUN-SPOTS FOR JULY, 1920.

No.	C. M. P.	Lat.	H	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1707	June 27.0	+15°	23	βγ	x														
1709	July 1.5	+14	30	αp	αp	αp	αp	αp	αp	αp									
1710	3.4	−14	30	βp	βp	βp	βp	βp	βp	αp	αp	αp							
1711	9.5	+17	18				β	β	βp	βp	βf	βp	βp	β	βp	β	αp		
1712	3.8	− 6	8						βp										
1713	13.6	− 4	16								αp	βp	αp	α	α	α			
1714	20.8	−14	9															x	
				3	3	2	3	3	4	3	3	3	2	2	2	2	1	1	

No.	C. M. P.	Lat.	H	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1714	July 20.8	−14°	9	α	α	α	α	α	x	x									
1715	July 13.6	− 5	7		αp	βp	x												
1716	22.8	+12	26		αp	αp	α	α	α	α	α	α	α	α	α	α	x		
1717	22.8	+ 8	11		αp	αp	α	β	αp	αp									
1718	17.3	+ 8	7					α	x										
1719	22.6	+14	3						βp	α									
1720	28.5	+14	23							x	α	α	α	α	α	α	α	α	α
1721	24.2	+ 8	4								α	βγ	αp	αp	x	α			
1722	30.6	−14	24										α	α	αp	αp	αp	αp	αp
1723	Aug. 1.6	− 6	4												x	β	βp		
				1	4	4	4	4	5	5	3	3	4	4	5	5	4	2	2

NOTES.

No. 1715 A revival of No. 1713.

No. 1716 A return of No. 1707. No. 1716 was not a typical α group until July 24. Before that date the group consisted of a rather large positive spot followed by smaller spots, which were also positive. It is very unusual for following companions to have the same polarity as the leader when they are as far distant as in this group. No. 1707 was also peculiar in polarity distribution.

No. 1720 A return of No. 1709.

No. 1721 On July 23rd a single small negative spot was observed which was apparently in the center of the surrounding calcium flocculi. On July 24th two small preceding positive spots had appeared and also a very small positive spot due north of the negative spot.

No. 1722 A return of No. 1710.

MAGNETIC CLASSIFICATION OF SUN-SPOTS FOR AUGUST, 1920.

No.	C. M. P.	Lat.	H	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1720	July 28.5	+14°	23	α	βp	x													
1722	30.6	−14	24	αp	αp	αp	αp	x											
1724	Aug. 5.6	+13	7		βp	βp													
1725	5.0	+19	4			αp													
1726	2.8	+13	7					βp	βp	αp									
1727	4.5	−10	5					βp											
1728	1.1	+13	4						β										
1729	5.6	+13	5							α									
1730	15.1	+13	22									x	x	βf	βf	βf	βf	βf	
1731	17.6	−22	27												αp	αp	βp	βp	
1732	18.1	−12	9												x	αf	βf	β	
1733	18.8	+12	15													α	α	α	
				2	3	4	1	3	2	2	0	1	1	1	3	4	4	4	

No.	C. M. P.	Lat.	H	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1730	Aug. 15.1	+13°	22	βf	α														
1731	17.6	−22	27	βp	αp	βp	βp	βp	αp	αp	αp								
1732	18.1	−12	9	αf															
1733	18.8	+12	15	αp	αp	αp	α	α	α	α									
1734	27.3	+11	23						x	αp	αp	x	α	α	αp				
1735	28.2	+16	4										α	x					
1736	30.2	− 2	3											γ					
1737	Sept. 2.4	−14	30														βp	βp	βp
				4	3	2	2	2	3	3	2	1	2	3	1	0	1	1	1

NOTES.

No. 1729 A revival of No. 1724.

No. 1732 Altho no spots were seen in this region after August 16th, bright calcium flocculi were present until the region passed over the limb on August 23rd.

No. 1733 A return of No. 1716.

No. 1734 This was a regular unipolar group, the principal spot, which was positive, being accompanied by one or two small spots of the same polarity. On August 26th and 27th two small positive spots appeared three or four degrees following the main spot. On these days it resembled No. 1716 in this respect.

No. 1735 This was a small negative spot on August 25th. On August 26th there were some faint markings present which were too small for polarity determinations.

No. 1736 This group consisted of a very small negative spot, about two degrees north and half a degree preceding a very small positive spot. The inclination to the equator was so abnormal that it was not classed as a bipolar group.